CLAIMS

1. A method comprising:

exposing a first surface or region of a surface carrying a first immobilized component and a second surface or region of a surface carrying a second immobilized component to colloid particles carrying immobilized species; and

determining immobilization of the colloid particles to the first or second surface or region.

2. The method of claim 1 wherein the first surface and the second surface are connected.

3. The method of claim 1 wherein at least one of the first surface and the second surface is substantially planar.

4. The method of claim 1 wherein the first surface is separate from the second surface.

5. The method of claim 1 wherein at least one of the first surface and the second surface comprises a bead.

6. The method of claim 5 wherein the bead comprises an ion exchange resin.

7. The method of claim 5 wherein the bead comprises polystyrene.

8. The method of claim 5 wherein the bead is coated with a charged species.

9. The method of claim 5 wherein the first immobilized component is nonspecifically adsorbed to the bead.

10. The method of claim 5 wherein the first immobilized component is covalently attached to the bead.

11. The method of claim 10 wherein the first immobilized component is attached to the bead via EDC/NHS chemistry.

12. The method of claim 5 wherein the bead comprises a moiety that can bind an affinity tag of a binding partner.

13. The method of claim 5 wherein the colloid particles are immobilized to the first or second surface or region via a metal binding tag/metal/chelate linkage.

14. The method of claim 2 wherein the first and second surfaces or regions of surfaces are different, spatially addressable regions of a surface.

15. The method of claim 2 wherein the first immobilized component is covalently attached to the first surface or region of a surface.

16. The method of claim 15 wherein the first immobilized component comprises amino acids and is attached via EDC/NHS chemistry.

17. The method of claim 2 wherein the first immobilized component is attached to the surface via a metal binding tag/metal/chelate linkage.

18. The method of claim 1 wherein the first surface or region of a surface is a chip.

19. The method of claim 1 wherein the first surface or region of a surface comprises a SAM.

20. The method of claim 1 wherein the colloid particles comprise SAMs.

21. The method of claim 20 wherein the colloid particles are attached to the immobilized species via EDC/NHS chemistry.

22. The method of claim 20 wherein the colloid particles are attached to the immobilized species via histidine-tagged Protein G.

23. The method of claim 1 wherein the colloid particles comprise a signaling entity.

24. The method of claim 23 wherein the signaling entity is a metallocene.

25. The method of claim 24 wherein the metallocene is a ferrocene.

26. The method of claim 23 wherein the signaling entity is an enzyme.

27. The method of claim 1 wherein the colloid particles are determined colorimetrically.

28. The method of claim 1 comprising, prior to the exposing step, separating at least first and second components of a mixture and immobilizing at least a portion of the first component on the first surface or region of a surface and at least a portion of the second component on the second surface or region of a surface.

29. The method of claim 28 wherein the mixture is separated by chromatography.

30. The method of claim 29 wherein the first surface or region of a surface comprises beads.

31. The method of claim 30 wherein the beads are of a similar type to beads used as a stationary phase to separate the mixture by chromatography.

32. The method of claim 28 wherein the mixture comprises a cell lysate.

33. The method of claim 28 wherein the mixture comprises a source of a natural product.

34. The method of claim 28 wherein the mixture comprises a substance purported to contain medicinal products.

35. The method of claim 28 wherein the mixture comprises a soil extract.

36. The method of claim 28 wherein the mixture comprises a plant extract.

37. The method of claim 1 comprising, prior to the exposing step, separating at least first and second components of a mixture and immobilizing at least a portion of the first component onto a first colloid particle and at least a portion of the second component onto a second colloid particle.

38. The method of claim 37 wherein the mixture is separated by chromatography.

39. The method of claim 1 comprising separating at least first and second components of a mixture and immobilizing at least a portion of the first component on a first colloid and at least a portion of the second component on a second colloid.

40. The method of claim 1 wherein at least one of the first surface and the second surface comprises an electrode.

41. The method of claim 40 wherein the electrode comprises a SAM.

42. The method of claim 41 wherein the SAM includes a binding partner of an affinity tag.

43. The method of claim 42 wherein the affinity tag is not DNA.

44. A method comprising:

immobilizing a first species on a first colloid and a second species on a second colloid;

exposing the first and second colloids to at least one surface; and

determining immobilization of the first or second colloids on the surface.

45. The method of claim 44 wherein the first and second colloids are exposed to two different surfaces or regions of a surface, the surfaces or regions of a surface having a common binding partner immobilized thereon.

46. The method of claim 44 comprising, prior to the immobilizing step, separating the first and second species from a mixture.

47. The method of claim 45 wherein the mixture comprises a cell lysate.

48. The method of claim 44 wherein a suspected binding partner is immobilized on the surface.

49. The method of claim 44 wherein the colloids comprise a signaling entity.

50. The method of claim 44 wherein the first and second species are proteins.

51. The method of claim 44 further comprising exposing the first and second colloid particles to a second surface or region of a surface.

52. The method of claim 44 comprising determining an interaction between at least one of the colloids and the surface.

53. A method comprising:

chromatographically separating at least first and second components of a mixture with a chromatography column including beads;

attaching the first component to a first bead of the type used in the chromatography column and attaching the second component to a second bead of the type used in the chromatography column; and

exposing the first and second beads to colloid particles carrying immobilized species.

54. The method of claim 53 comprising determining immobilization of colloid particles carrying attached species with the first bead or the second bead.

55. The method claim 54 wherein the mixture is a natural product.

56. The method of claim 55 wherein the mixture is a plant material.

57. The method of claim 55 wherein the mixture is a cell lysate.

58. The method of claim 55 wherein the mixture is a soil extract.

59. A kit comprising:

a first package containing colloid particles comprising a SAM; and

instructions for immobilizing a binding partner to the colloid particle.

60. The kit of claim 59 wherein the SAM is derivatized to facilitate linking of the binding partner to the SAM.

61. The kit of claim 60 wherein the SAM incorporates NTA.

62. The kit of claim 60 wherein the SAM incorporates glutathione.

63. The kit of claim 60 wherein the SAM incorporates biotin.

64. The kit of claim 59 including a package containing at least one binding partner adapted to be immobilized to the colloid particles.

65. The kit of claim 64 wherein the binding partner is a protein.

66. The kit of claim 59 wherein a binding partner is immobilized on the colloid particles.

67. The kit of claim 66 wherein the binding partner is a protein.

68. The kit of claim 59 wherein the colloid particles comprise gold.

69. A kit comprising:

colloid particles;

a first package containing a first species immobilized with respect to or adapted to be immobilized with respect to colloid particles; and

a second package containing a second species immobilized with respect to or adapted to be immobilized with respect to colloid particles.

70. A kit as in claim 69 comprising:

a first package containing colloid particles wherein the first species is immobilized with respect to the particles;

a second package containing colloid particles wherein the second species is immobilized with respect to the particles.

71. A kit of claim 70 wherein at least one of the first or second species is not non-specifically immobilized to the particles.

72. The kit of claim 70 wherein the colloid particles carrying the first species comprise a SAM.

73. The kit of claim 69 wherein the colloid particles comprise gold.

74. The kit of claim 72 wherein the first species is immobilized on the colloid particles via EDC/NHS chemistry.

75. The kit of claim 69 wherein at least one of the colloid particles comprises a signaling entity.

76. A method comprising:

exposing at least two surface regions, each presenting a different chemical, biochemical, or biological functionality to a sample;

determining an interaction pattern of the sample with the at least two surface regions, indicative of an interaction characteristic between at least one component of the sample with the at least two surface regions,

wherein the sample includes at least two components that carry identical immobilized signaling entities, and/or the determining step is carried out without determining the identity of the at least one component after interaction with the at least two surface regions.

77. A method as in claim 76, comprising:

presenting at least three surface regions each exposing a different chemical, biochemical, or biological functionality;

exposing the at least three surface regions to the sample; and

determining an interaction pattern of the sample with the at least three surface regions, indicative of an interaction characteristic between at least two components of the sample with each of the at least three surface regions.

78. A method as in claim 77, wherein each of at least two of the at least three components becomes immobilized at a surface region, indicative of the interaction pattern.

79. A method as in claim 77, wherein the sample is a first sample, further comprising exposing at least three surface regions, each exposing a different chemical, biochemical, or biological functionality to a second sample;

determining an interaction pattern of the second sample with the at least three surface regions to which the second sample has been exposed, indicative of an interaction characteristic between at least two components of the second sample with each of the at least three surface regions; and

comparing the interaction pattern of the second sample with the interaction pattern of the first sample.

80. A method as in claim 79, wherein the at least three surface regions to which the first sample is exposed is essentially identical to the at least three surface regions to which the second sample is exposed.

81. A method as in claim 79 wherein each of the at least three surface regions to which the second sample is exposed is arranged to correspond to one of the at least three surface regions to which the first sample was exposed.

82. A method as in claim 76 wherein the sample is selected from known drugs, putative drugs, cell lysates, cDNA libraries or their products, natural products and mixtures thereof.

83. A method as in claim 82 wherein the sample comprises at least a portion of a cell that has been exposed to a drug or putative drug.

84. A method as in claim 76 wherein the interaction pattern is determined by detecting a signal at the at least two surface regions.

85. A method as in claim 84 wherein the signal is light emission.

86. A method as in claim 84 wherein the signal is electrical.

87. A method as in claim 76 wherein the interaction pattern is determined by QCM.

88. A method as in claim 76 wherein the interaction pattern is determined by SPR.

89. A method as in claim 79 wherein at least one of the first sample and second sample is derived from proteins, known drugs, putative drugs, cell lysates, cDNA libraries, natural products and mixtures thereof.

90. A method as in claim 89 wherein at least one of the first sample and second sample is a cell lysate from a cell that has been treated with a drug or putative drug.

91. A method as in claim 89 wherein the interaction pattern is determined by detecting a signal at or near each of the at least two surface regions.

92. A method as in claim 91 wherein the signal is light emission.

93. A method as in claim 91 wherein the signal is electrical.

94. A method as in claim 79 wherein the interaction pattern is determined by QCM.

95. A method as in claim 79 wherein the interaction pattern is determined by SPR.

96. A method as in claim 76 further comprising comparing the interaction pattern to a library of known interaction patterns.

97. A method as in claim 76 wherein at least one of the two surface regions presents a protein, nucleic acid, peptide, drug, small molecule or a mixture thereof.

98. A method as in claim 76 further comprising immobilizing a colloid to a component of the sample.

99. A method comprising:
separating at least two components of a mixture on a stationary phase;
eluting at least a first component from the stationary phase with a fluid;
altering the fluid;
immobilizing at least a portion of the first component to a surface;
exposing the surface to a putative binding partner; and
determining binding interaction between the at least a portion of the first component and the putative binding partner.

100. The method of claim 99 wherein the surface comprises stationary phase material.

101. A method as in claim 99 wherein the altering step comprises exchanging the first fluid with a second fluid, thereby providing the first component in the second fluid.

102. A method as in claim 101 wherein the fluid is exchanged via dialysis.

103. The method claim 99 wherein the mixture is a natural product.

104. The method of claim 99 wherein the mixture is a plant material.

105. The method of claim 99 wherein the mixture is a cell lysate.

106. The method of claim 99 wherein the mixture is a soil extract.

107. A method comprising:

separating at least two components of a mixture on a stationary phase;

eluting at least a first component from the stationary phase with a fluid;

immobilizing at least a portion of the first component to a colloid;

exposing the colloid to a putative binding partner immobilized on a surface; and

determining binding interaction between the at least a portion of the first component and the putative binding partner.

108. The method claim 107 wherein the mixture is a natural product.

109. The method of claim 107 wherein the mixture is a plant material.

110. The method of claim 107 wherein the mixture is a cell lysate.

111. The method of claim 107 wherein the mixture is a soil extract.

112. A method comprising:

exposing a surface carrying a first immobilized component to a colloid particle immobilized to a second component and a linking entity;

exposing the colloid particle to a cross-linking compound;

forming a network of colloid particles immobilized to the first component via the linking entity and the cross-linking compound; and

determining immobilization of the colloid particles on the surface.

113. The method of claim 112 wherein the colloid particles comprise a signaling entity.

114. The method of claim 112 wherein the cross-linking compound comprises a signaling entity.

115. The method of claim 112 wherein the cross linking compound is immobilized to a second colloid particle.

116. The method of claim 115 wherein the second colloid particle is immobilized to a linking entity.

117. The method of claim 23 wherein the signaling entity comprises a fluorescent moiety.

118. A method as in claim 76, comprising:

exposing at least ten surface regions, each presenting a different chemical, biochemical, or biological functionality to a sample containing at least ten components;

determining an interaction pattern of the sample with the at least ten surface regions, indicative of an interaction characteristic between at least ten components of the sample with the at least ten surface regions,

wherein the at least ten components of the sample carry identical immobilized signaling entities, and/or the determining step is carried out without determining the identity of at least one of the at least ten components after interaction with the at least two surface regions.

119. A method as in claim 118, wherein the determining step is carried out without determining the identity of any of the at least ten components after interaction with the at least two surface regions.

120. A method comprising:

exposing at least two surface regions, each presenting a different chemical, biochemical, or biological functionality to a sample;

determining an interaction pattern of the sample with the at least two surface regions, indicative of an interaction characteristic between at least one component of the sample with the at least two surface regions,

wherein the determining step does not distinguish between at least two components having interacted with the at least two surface regions.